

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) ~~A method~~Method of operating for minimizing intracell and/or intercell interference for a data transmission system comprising a scheduler that manages at least a first cell by communicating with a first base station communicating with a number of user equipments in the first cell via a first antenna system effective in one or more cell segments covering certain directions in the first cell, where the method comprises ~~the steps of:~~

~~[[ - ]]~~the first base station receiving information from the user equipments in the first cell, by means of the first antenna system;

~~[[ - ]]~~the first base station communicating the information to the scheduler;

~~[[ - ]]~~the scheduler identifying each user equipment in the first cell;

~~[[ - ]]~~the scheduler identifying in which cell segment each user is positioned;

~~[[ - ]]~~the scheduler allotting a first time slot to at least one user equipment in a first cell segment in the first cell;

~~[[ - ]]~~the scheduler allotting the first time slot also to at least one user equipment in a second cell segment in the first cell;

~~[[ - ]]~~the first antenna system sending information from the base station simultaneously to all user equipments allotted to the first time slot.

2. (Currently Amended) ~~A method~~Method according to claim 1, ~~characterized in that further comprising the scheduler also manages managing also~~ a second cell by communicating with the first base station or a second base station communicating with a number of user equipments in the second cell via the first antenna system or a second antenna system effective in

one or more cell segments covering certain directions in the second cell, where the method further comprises the steps of:

- ~~[[ - ]]~~ the first base station or the second base station receiving information from the user equipments in the second cell, by means of the first antenna system or the second antenna system;
- ~~[[ - ]]~~ the first base station or the second base station communicating the information to the scheduler;
- ~~[[ - ]]~~ the scheduler identifying each user equipment in the second cell;
- ~~[[ - ]]~~ the scheduler identifying in which cell segment each user equipment is positioned;
- ~~[[ - ]]~~ the scheduler allotting the first time slot to at least one user equipment in a first cell segment in the second cell;
- ~~[[ - ]]~~ the scheduler allotting the first time slot also to at least one user equipment in a second cell segment in the second cell.

3. (Currently Amended) A method ~~Method~~ according to claim 1,  
~~characterized in that further comprising~~ the scheduler ~~divides~~ dividing the first cell into the cell segments on the basis of ~~intracell and/or intercell~~ interference determined by the scheduler by using spatial information about where each user equipment is situated in the first cell.
4. (Currently Amended) A method ~~Method~~ according to claim 1,  
~~characterized in that further comprising~~ the scheduler ~~allotting~~ the time slots to the user equipments on the basis of ~~intracell and/or intercell~~ interference determined by the scheduler by using the spatial information about where each user equipment is situated in the cell.
5. (Currently Amended) A method ~~Method~~ according to claim 1,  
~~characterized in that wherein~~ the first antenna system comprises an

adaptive antenna transmitting into each cell segment using beam forming functions.

6. (Currently Amended) A method ~~Method~~ according to claim 1,  
~~characterized in that further comprising allotting~~ only one user  
equipment in each cell segment is allotted to the first time slot such that the first  
antenna system sends information to only one user equipment in each cell  
segment.
7. (Currently Amended) A method ~~Method~~ according to claim 1,  
~~characterized in that further comprising allotting~~ two user equipments in  
at least the first cell segment ~~are allotted~~ to the same time slot.
8. (Currently Amended) A method ~~Method~~ according to claim 1,  
~~characterized in that further comprising the first antenna system sends~~  
sending information from the base station simultaneously to all user equipments  
allotted to the first time slot.
9. (Currently Amended) A method ~~Method~~ according to claim 1,  
~~characterized in that further comprising the scheduler uses using~~  
direction of arrival in order to identify the position of the user equipments.
10. (Currently Amended) A method ~~Method~~ according to claim 1,  
~~characterized in that further comprising the first antenna system sends~~  
sending simultaneously to all user equipments in the system allotted to the same  
time slot according to a time slot sequence.

11. (Currently Amended) A method ~~Method~~ according to claim 1,  
~~characterized in that~~ further comprising using the information sent by the  
first antenna system ~~may be used~~ for both uplink or downlink transmission.

12. (Currently Amended) A method ~~Method~~ according to claim 1,  
~~characterized in that~~ wherein the transmission system uses HSDPA.

13. (Currently Amended) A method ~~Method~~ according to claim 1,  
~~characterized in that~~ further comprising the scheduler ~~allots~~ allotting the  
first time slot and/or ~~divides~~ dividing the cell into cell segments, based on the  
~~minimum intercell and/or intracell interference.~~

14. (Currently Amended) A Arrangement for minimizing intracell and/or intercell  
interference for a data transmission system comprising:  
a scheduler configured to manage ~~that manages~~ at least a first cell by communicating  
with a first base station, the first base station in turn communicating with a number of  
user equipments in the first cell via a first antenna system effective in one or more cell  
segments covering certain directions in the first cell, ~~where the arrangement comprises;~~  
[[ - ]] wherein the first base station is arranged to receive information from the user  
equipments in the first cell [[,]] by means of the first antenna system;  
[[ - ]] wherein the first base station is arranged to send the information to the scheduler;  
[[ - ]] wherein the scheduler is arranged to identify each user equipment in the first cell;  
[[ - ]] wherein the scheduler is arranged to identify in which cell segment each user is  
positioned;  
[[ - ]] wherein the scheduler is arranged to allot a first time slot to at least one user  
equipment in a first cell segment in the first cell;  
[[ - ]] wherein the scheduler is arranged to allot the first time slot also to at least one  
user equipment in a second cell segment in the first cell;

~~[[ - ]]~~ wherein the first antenna system is arranged to send information from the base station simultaneously to all user equipments allotted to the first time slot.

15. (Currently Amended) ~~A system~~Arrangement according to claim 14,

~~characterized in that~~ wherein the scheduler is arranged to manage also a second cell by communicating with the first base station or a second base station communicating with a number of user equipments in the second cell via the first antenna system or a second antenna system effective in one or more cell segments covering certain directions in the second cell, where the arrangement comprises;

~~[[ - ]]~~ wherein the first base station or the second base station is arranged to receive information from the user equipments in the second cell, by means of the first antenna system or the second antenna system;

~~[[ - ]]~~ wherein the first base station or the second base station is arranged to send the information to the scheduler;

~~[[ - ]]~~ wherein the scheduler is arranged to identify each user equipment in the second cell;

~~[[ - ]]~~ wherein the scheduler is arranged to identify in which cell segment each user equipment is positioned;

~~[[ - ]]~~ wherein the scheduler is arranged to allot the first time slot to at least one user equipment in a first cell segment in the second cell;

~~[[ - ]]~~ wherein the scheduler is arranged to allot the first time slot also to at least one user equipment in the second cell segment in the second cell.

16. (Currently Amended) ~~A system~~Arrangement according to claim 14,

~~wherein characterized in that~~ the scheduler is arranged to divide the first cell into the cell segments on the basis of ~~intracell and/or intercell~~ interference determined by the scheduler by using spatial information about where each user equipment is situated in the first cell.

17. (Currently Amended) A system~~Arrangement~~ according to claim 14,  
~~wherein characterized in that~~ the scheduler is arranged to allot the time slots to the user equipments on the basis of intracell and/or intercell interference determined by the scheduler by using spatial information about where each user equipment is situated in the cell.
18. (Currently Amended) A system~~Arrangement~~ according to claim 14,  
~~wherein characterized in that~~ the first antenna system comprises an adaptive antenna arranged to transmitting into each cell segment using beam forming functions.
19. (Currently Amended) A system~~Arrangement~~ according to claim 14,  
~~wherein characterized in that~~ the arrangement system is arranged to allot the first time slot to only one user equipment in each cell segment such that the first antenna system sends information to only one user equipment in each cell segment.
20. (Currently Amended) A system~~Method~~ according to claim 14,  
~~wherein characterized in that~~ the arrangement system is arranged to allot the same time slot to two user equipments in at least the first cell segment.
21. (Currently Amended) A system~~Arrangement~~ according to claim 14,  
~~wherein characterized in that~~ the first antenna system is arranged to send information from the base station simultaneously to all user equipments allotted to the first time slot.
22. (Currently Amended) A system~~Arrangement~~ according to claim 14,  
~~wherein characterized in that~~ the scheduler is arranged to use direction of arrival in order to identify the position of the user equipments.

23. (Currently Amended) A system~~Arrangement~~ according to claim 14,  
~~wherein characterized in that~~ the first antenna system is arranged to send  
simultaneously to all user equipments in the system allotted to the same time slot  
according to a time slot sequence.

24. (Currently Amended) A system~~Method~~ according to claim 14,  
~~wherein characterized in that~~ the scheduler is arranged to allot the first  
time slot and/or divide the cell into cell segments, based on the ~~minimum intercell~~  
~~and/or intracell~~ interference.